Fall 2011

Nuclear's True Image

Bryan Bordenkecher
bbordenkecher@gmail.com

ENSC 230/AECN 399 Energy and the Environment:
Economics and Policy
OP-ED
12/09/2011

Nuclear's True Image

By Bryan Bordenkecher
Email: bbordenkecher@gmail.com

With the Fukushima Dai-ichi crisis in Japan, we have seen the precarious interest and suspected revival of nuclear power disappear overnight. Leaders from Germany, Italy, and Switzerland, have decided to phase out their nuclear power plant fleets. On the other hand, the United Kingdom, France, China, and India have held firm to their commitments to further incorporate nuclear into their power generation systems.

Because of the lack of scale and consistency for current renewables, the future of the United States electric grid must consist of some kind of large-scale base generation. Coal and nuclear are the leading candidates because they are cheap, energy-intense, scalable, and their known reserves are expected to last well outside of this century. I propose that with a new era of intensifying climate change, nuclear is the more favorable option as the disparity in GHG emissions between the two becomes the deciding factor.

Many would refuse nuclear power on the grounds of safety. On the contrary, it is one of the safest forms of energy generation. Per unit of energy, coal as an energy source causes 161 deaths per TWh, per year, whereas nuclear only causes 0.04 deaths as a world average.

Considering coal's carbon intensity, it can be argued that the effects of climate change would far outweigh any localized incident of leaked ionizing radiation. The risks of continued

use of coal outweigh the incidental risks of nuclear especially as the effects of climate change become increasingly worse and permanent.

The U.S. investment in nuclear energy is flat-out insufficient for our future needs of clean and plentiful energy. This amount of R&D will not provide the nation will sufficient funds to build the next generation of reactors that solve the shortfalls of current reactors. Traveling Wave Reactors, Fast Integral Reactors and Liquid Fluoride Thorium Reactors are ready for investment and implementation. Our government should substantially increase investments of nuclear power in order to guide utilities as well as promote next generation technologies. With more investment comes innovation toward efficiency, waste reductions, and safety. We need more government incentives to give support for investors while also investing in educational campaigns.

Nuclear power has proven to be a safe, reliable, and abundant source of electricity for the United States over the last 50 years. It should dominate our future generation portfolio so that we can counter climate change, increase energy independence, and provide for an ever increasing energy demand.